UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/014,189	11/13/2001	Srinivas Gutta	US010576	3037

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EXAMINER
JARRETT, SCOTT L

ART UNIT	PAPER NUMBER
3623	

DATE MAILED: 03/13/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *13 November 2001*.

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-23* is/are pending in the application.

     4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-23* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *05 March 2002* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

     a)☐ All   b)☐ Some * c)☐ None of:

         1.☐ Certified copies of the priority documents have been received.

         2.☐ Certified copies of the priority documents have been received in Application No. _____.

         3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

     * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *11/13/01, 7/23/03*.

4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other: _____.

DETAILED ACTION

Title

1.   The title of the invention is not descriptive. A new title is required that is clearly

indicative of the invention to which the claims are directed.

The following title is suggested: System and Method for Identifying Items Having

Symbolic Attributes Using Value Difference Measures and Clustering.

Abstract

2.   Applicant is reminded of the proper language and format for an abstract of the

disclosure.

The abstract should be in narrative form and generally limited to a single

paragraph on a separate sheet within the range of 50 to 150 words. It is important that

the abstract not exceed 150 words in length since the space provided for the abstract

on the computer tape used by the printer is limited. The form and legal phraseology

often used in patent claims, such as "means" and "said," should be avoided. The

abstract should describe the disclosure sufficiently to assist readers in deciding whether

there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information

given in the title. It should avoid using phrases which can be implied, such as, "The

disclosure concerns," "The disclosure defined by this invention," "The disclosure

describes," etc.

The abstract of the disclosure is objected to because it is longer than 150 words.

Correction is required. See MPEP § 608.01(b).

Claim Rejections - 35 USC § 101

3.   35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

4.   Claims 1-23 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

Regarding Claims 1-23, a claimed invention to be statutory, the claimed invention must produce a useful, concrete, and tangible result.

In the present case, the method for identifying one or more mean items merely computes one or more mathematical values (variances, distances, differences), selects symbolic values for one or more symbolic attributes of items (item features/characteristics) and groups (organizes, clusters) items based on the mathematical values/symbolic attributes/values and therefore does produce a useful, concrete, and tangible result.

A useful, concrete and tangible result, for example, might be achieved through the utilization of the grouped/cluster items to recommend television programs to users, a real-world/actual effect.

Claim Rejections - 35 USC § 102

5.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that

form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6.   Claims 1-5 and 9-15 are rejected under 35 U.S.C. 102(b) as being clearly

anticipated by Datta et al., Symbolic Nearest Mean Classifiers (1997).

Regarding Claims 1 and 10 Datta et al. teach a method for identifying

(characterizing, classifying, categorizing, etc.) one or more mean items for a plurality of

items, J, each of the items having at least one symbolic attribute (feature, characteristic,

etc.), each symbolic attribute having at least one possible value and further comprising:

- computing (determining, calculating, etc.) a variance (distance, difference, etc.)

of the plurality of items, J, for each of the possible symbolic values, x_u, for each of the

symbolic attributes ("Distances between Symbolic Attribute Values", Columns 2-3, Page

2); and

- selecting for each of the symbolic attributes (item features/characteristics) at

least one symbolic value, x_u, that minimizes the variance as the mean symbolic value

("The Mean of Symbolic Attributes", Column 2, Page 2).

Regarding Claims 2 and 11 Datta et al. teach a method for identifying one or more mean items wherein the mean symbolic value for each symbolic attribute comprises a mean of the plurality of items ("The Mean of Symbolic Attributes", Column 2, Page 2).

Regarding Claims 3 and 14 Datta et al. teach a method for identifying one or more mean items wherein the symbolic attributes comprises one or more hypothetical items (tentative, potential, probable, projected, sample, test, example, training, etc.; Column 2, Paragraph 1, Page 2; "Learning Multiple Prototypes", Column 1, Page 4).

Regarding Claims 4 and 12 Datta et al. teach a method for identifying one or more items further comprising assigning a label (class, descriptor, text, name, tag, etc.) to the plurality of items using at least one symbolic value from the at least one of the item means ("Learning Multiple Prototypes", Column 1, Page 4; "K-Means Clustering", Columns 1-2, Page 4).

Regarding Claims 5 and 13 Datta et al. teach a system and method for identifying one or more items wherein the plurality of items are a cluster (grouping, collection, set, etc.) of similar items ("K-Means Clustering", Columns 1-2, Page 4; Figures 1a, 1b).

Regarding Claims 9, 15 and 21 Datt et al. teach a system and method for identifying one or more items wherein the variance (distance, difference, similarity measure, etc.) is computed as follows:

$$Var(J) = \sum_{i \in J} (xi - xu)^2$$

where J is a cluster of items from the same class, x_i is a symbolic feature value from item i and x_u is an attribute value from one of the items in J such that it minimizes *Var(J)* ("The Mean of Symbolic Attributes", Column 2, Page 2).

Claim Rejections - 35 USC § 103

7.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

8.   Claims 6-8 and 16-23 are rejected under 35 U.S.C. 103(a) as being unpatentable

over Datta et al., Symbolic Nearest Mean Classifiers (1997) as applied to claims 1-5

and 9-15 above.

Regarding Claims 6-8 Datta et al. teach a method for identifying one or more

items as discussed above.

Datta et al. is silent on the exact nature of the items being identified/classified

and as such does not expressly teach that the items are programs, content or products

as claimed.

Official notice is taken that classifying/identifying items such as television

programs, content and/or products using of well-known pattern-recognition methods

including but not limited to: value difference measures/metrics, nearest-neighbor,

classifiers, similarity/instance-based methods, lazy learning, or the like, is old and very

well known wherein these methods/systems are utilized for things such as

recommending items to users.

It would have been obvious to one skilled in the art at the time of the invention that the method for identifying one or more mean items for a plurality of items as taught by Datta et al. would have been utilized to identify/classify any of a plurality of items including but not limited to programs, products and/or content in view of the teachings of official notice.

Further it is noted that while Datta et al. does not expressly teach the specific nature of the items (programs, content, products, etc.) as recited in claims 6-8; these differences are only found in the non-functional descriptive material and are not functionally involved in the steps recited nor do they alter the recited structural elements. The recited method steps would be performed the same regardless of the specific nature of the items being identified/classified. Further, the structural elements remain the same regardless of the specific nature of the items being identified/classified. Thus, this descriptive material will not distinguish the claimed invention from the prior art in terms of patentability, see In re Gulack, 703 F.2d 1381, 1385, 217 USPQ 401, 404 (Fed. Cir. 1983); In re Lowry, 32 F.3d 1579, 32 USPQ2d 1031 (Fed. Cir. 1994); MPEP 2106.

Regarding Claims 16 and 22-23 Datta et al. teach a method for identifying one or more mean items for a plurality of items, J, each of the items having at least one symbolic attribute (feature, characteristic, etc.), each symbolic attribute having at least one possible value and further comprising:

- computing (determining, calculating, etc.) a variance (distance, difference, etc.) of the plurality of items, J, for each of the possible symbolic values, x_u, for each of the symbolic attributes ("Distances between Symbolic Attribute Values", Columns 2-3, Page 2); and

- selecting for each of the symbolic attributes (item features/characteristics) at least one symbolic value, x_u, that minimizes the variance as the mean symbolic value ("The Mean of Symbolic Attributes", Column 2, Page 2).

While Datta et al. teach a *method* for identifying one or more mean items for a plurality of items Datta et al. does not expressly teach that a *system* and/or article of manufacture is utilized to perform/execute the method as claimed.

It was known at the time of the invention that merely providing an automatic means to replace a manual activity which accomplishes the same result is not sufficient to distinguish over the prior art, In re Venner, 262 F.2d 91, 95, 120 USPQ 193, 194 (CCPA 1958). For example, simply automating the step(s) of computing a variance and selecting for each symbolic attribute a symbolic value gives you just what you would expect from the manual step as shown in Datta et al. In other words there is no enhancement found in the claimed steps. The claimed system only provides automation for the manual activity. The end result is the same as compared to the manual method. A computer can simply iterate the steps faster. The result is the same.

It would have been obvious to a person of ordinary still in the art at the time of the invention to automate the method for identifying one or more mean items for a plurality of items as taught by Datta et al.; the resultant system/method being capable of performing the methods steps faster and/or more efficiently, which is purely known, and an expected result from automation of what is known in the art.

Regarding Claim 17 Datta et al. teach a method for identifying one or more mean items wherein the mean symbolic value for each symbolic attribute comprising a mean of the plurality of items ("The Mean of Symbolic Attributes", Column 2, Page 2).

Regarding Claim 18 Datta et al. teach a method for identifying one or more mean items wherein the symbolic attributes comprises one or more hypothetical items (tentative, potential, probable, projected, sample, test, example, training, etc.; Column 2, Paragraph 1, Page 2; "Learning Multiple Prototypes", Column 1, Page 4).

Regarding Claim 19 Datta et al. teach a method for identifying one or more items further comprising assigning a label (class, descriptor, text, name, tag, etc.) to the plurality of items using at least one symbolic value from the at least one of the item means ("Learning Multiple Prototypes", Column 1, Page 4; "K-Means Clustering", Columns 1-2, Page 4).

Regarding Claim 20 Datta et al. teach a method for identifying one or more items wherein the plurality of items are a cluster (grouping, collection, set, etc.) of similar items ("K-Means Clustering", Columns 1-2, Page 4; Figures 1a, 1b).

Regarding Claim 21 Datta et al. teach a method for identifying one or more items wherein the variance is computed as follows:

$$Var(J) = \sum_{i \in J} (xi - xu)^2$$

where J is a cluster of items from the same class, x_i is a symbolic feature value from item i and x_u is an attribute value from one of the items in J such that it minimizes $Var(J)$ ("The Mean of Symbolic Attributes", Column 2, Page 2).

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- Homma et al., U.S. Patent no. 5,179,643, teach a system and method for identifying one or more items using well-known similarity measures/metrics/calculations as well as clustering.

- Herz et al., U.S. Patent No. 5,754,939, teach a system and method for identifying items (object) of interest to users based on generated user profiles.

- Trovato et al., U.S. Patent No. 6,445,306, teach a method and system for identifying television programs using stereotypical user profiles.

- Schuetze et al., U.S. Patent No. 6,567,797, teach a system and method for clustered-based user item recommendations.

- Gutta et al., U.S. Patent Publication No. 2003/0233655, teach a system and method for generating stereotypical profiles for recommending items (television programs) to users.

- Bradley et al., U.S. Patent Publication No. 2004/0010497, teach a system and method for generating/analyzing data clusters using several well-known distance functions, such as the Hamming distance, to classify/cluster similar items.

- IND Technology Res. Int., JP 4062151596 A, teaches a system and method for clustering items based on cluster centers/centroids.

- Killian, Robert, EP 0854645 A2, teaches a system and method for identifying television items based on user profiles and television program information.

- Ismali et al., WO 01/17250 A1, teach a system and method for identifying and delivering television programs (items) based on user profile and program (content) information.

- Singularis S.A., WO 01/15449 A1, teaches a system and method for recommending content items to users based on interactive/adaptive user profiles.

- Ehrmantraut et al., The Personal Electronic Program Guide (1996) teach a system and method for recommending/filtering television programs based on matching user and content profiles/descriptors wherein the system/method utilizes well known clustering methods/approaches.

- Wilson et al., Value Difference Metrics for Continuously Valued Attributes (1996) teach several methods for classifying (identifying) a plurality of items having symbolic features/values using well known similarity/instance/memory-based learning techniques/approaches including but not limited to Value Difference Metric (VDM), Nearest Neighbor (NN), Radial Bias Function (RBF) and the like.

- Wilson et al., Improved Heterogeneous Distance Functions (1997) teach a plurality of well-known similarity/instance/memory-based learning techniques/approaches wherein the systems/methods use a plurality of distance (variance, difference) metrics (values, measures) such as Euclidean, city-block/Manhattan and the like.

- Datta et al., Learning Symbolic Prototypes (1997) teach a method for identifying a plurality of items having symbolic features and corresponding symbolic

values using symbolic prototype learners, which represent an improvement over well-known minimal-distance classifiers.

- Baudisch, Patrick, Recommending TV Programs (1998) teach a system and method for recommending television programs based on content and user profile information as well as the need to "jump-start" the initial recommendation/initialization of such systems/methods.

- Duch et al., A framework for similarity-based methods (1998) teach a method (framework) for minimal-distance based classification/identification methods/systems. Duch et al. further teach a plurality of well-known and widely used similarity measures (metrics) including but not limited to Modified Value Difference Metric (MVDM).

- Daelemans et al., TiMBL: Tilburg Memory Based Learner (1999) teach a system and method for identifying a plurality of items using well known tools, approaches and techniques including but not limited to Modified Value Difference Metric wherein users can specify what if any weights and to be used in classifying/identifying the clusters of items.

- Smith et al., Surfing the Digital Wave (1999) teach a system and method for recommending television programs based on a plurality of content/program and user information wherein the system utilizes well-known case-based and collaborative recommendation approaches/methods.

- Jain A.K. et al., Data Clustering: A Review (1999) teach a plurality of well known data clustering tools, techniques, methods and approaches including proximity/distance measures and class labeling.

- Jain A.K. et al., Statistical Pattern Recognition: A Review (2000) teach a plurality of well known statistical pattern recognition systems and methods including but not limited to classifiers and clustering.

- Duch et al., Symbolic Features in Neural Networks (2000) teach a method for identifying items having symbolic features and values using instance/similarity based learning approaches (e.g. Value Difference Metric).

- Gutta et al., TV Content Recommender System (2000) teach a system and method for recommending television programs/content/items to users based on a plurality of programming and user information/profiles.

- Sarwar et al., Analysis of Recommendation Algorithms for E-Commerce (2000) teach a plurality of well-known methods and systems for recommending items to users (recommender systems).

- Kaushal et al., A Multi-Agent TV Recommender (2001) a system and method for recommending television programs to users based on a plurality of user and program information.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Scott L. Jarrett whose telephone number is (571) 272-7033. The examiner can normally be reached on Monday-Friday, 8:00AM - 5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hafiz Tariq can be reached on (571) 272-6729. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the

Patent Application Information Retrieval (PAIR) system. Status information for

published applications may be obtained from either Private PAIR or Public PAIR.

Status information for unpublished applications is available through Private PAIR only.

For more information about the PAIR system, see http://pair-direct.uspto.gov. Should

you have questions on access to the Private PAIR system, contact the Electronic

Business Center (EBC) at 866-217-9197 (toll-free).

3/11/2006

SUSANNA M. DIAZ
PRIMARY EXAMINER

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